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Medical case

Full-Arch Restorations with DESS® ANGLEBase® on Upper and Lower Arches

BDT Deni Pavlovic presents a case featuring full-arch restorations: the upper arch restored using **DESS® ANGLEBase®** on Multi-Unit Abutments, and the lower arch with **ANGLEBase®** directly on implants.

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Belgrad (Serbia)

CASE PRESENTATION

This case involved some serious procedures in planning, surgery, and prosthodontics from both the clinical and the dental technician's side:

- Failing Removable Partial Denture (RPD)
- Maxillary partial almost total edentulism
- Significant variations of maxilla bone level
- Endo problems
- Shifted midline
- Missing 41 with canted 42
- Frontal mandibula tooth wear
- Multiple extractions needed
- Lowered vertical dimension of occlusion (VDO)

Initial situation

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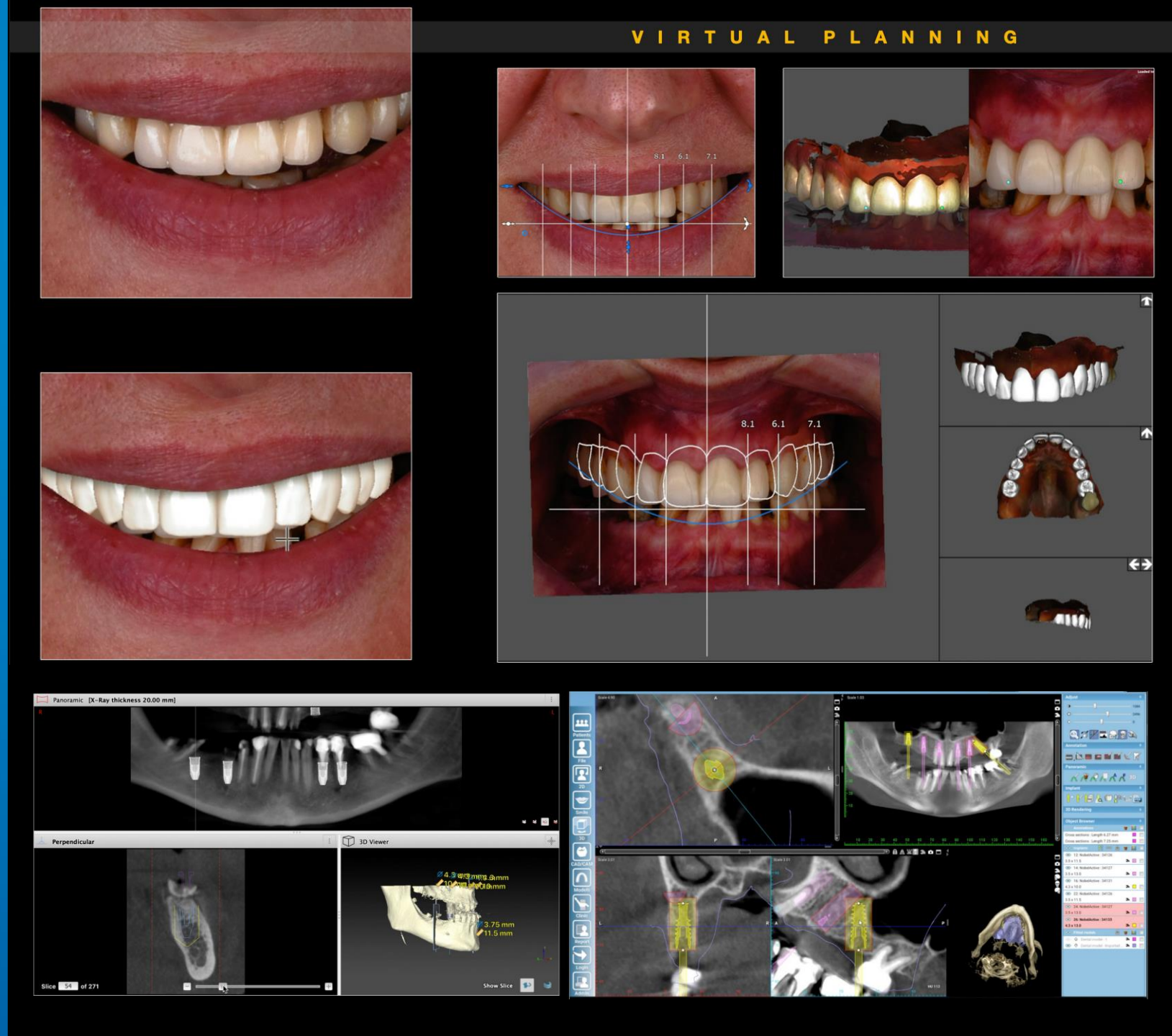
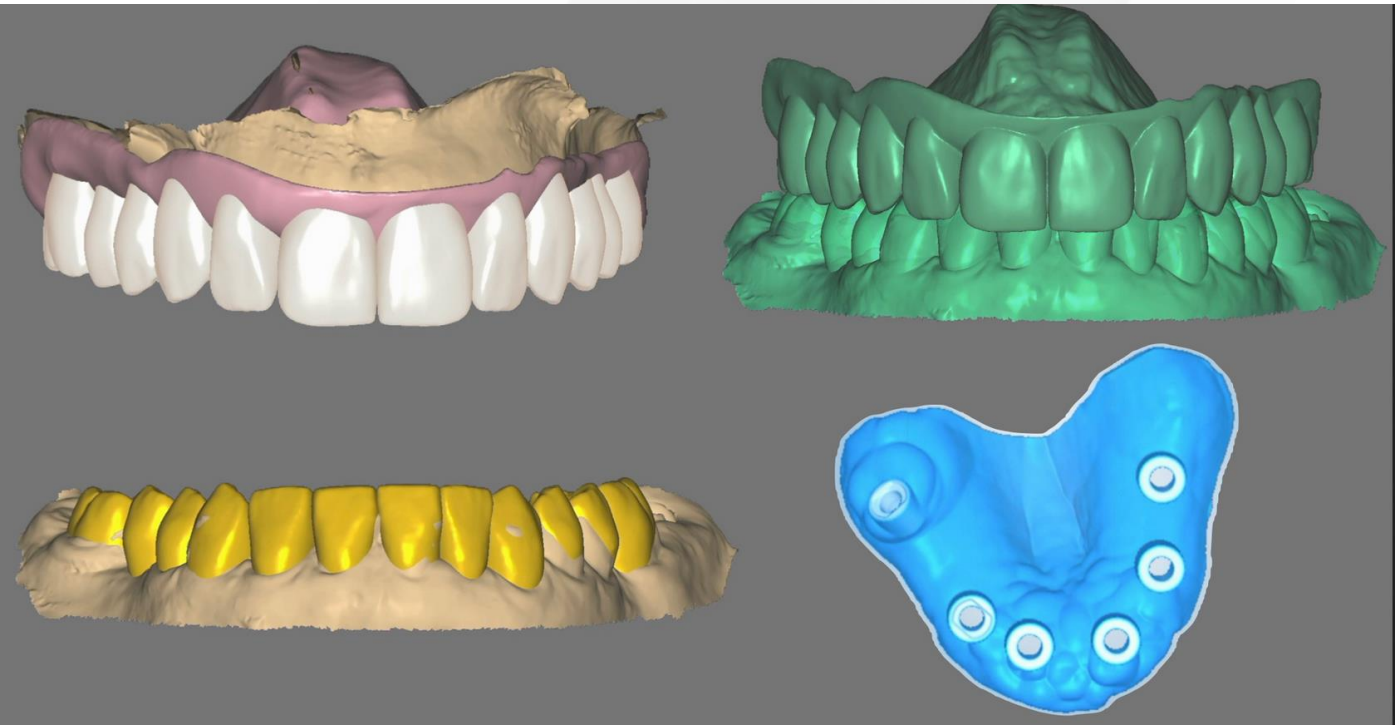
After the first encounter with this challenging case, including the information received from the practice, we started the virtual smile design.

Instead of drawing over 2D images, we overlayed 3D models of scanned jaws with 2D photography using a simple orthogonal picture and created a realistic, but still virtual, smile design.

We used all these parameters: medial, pupillary, lip and smile lines, position of the central incisor edge, buccal corridor, prosthetic plane level, tooth dimensions and proportions, etc.





The design of the upper setup was made in the form of a total or subtotal denture, while we went for a classic mockup for the lower jaw.

The difference was that, instead of waxing and tooth placement from the set, we would use 3D printing.

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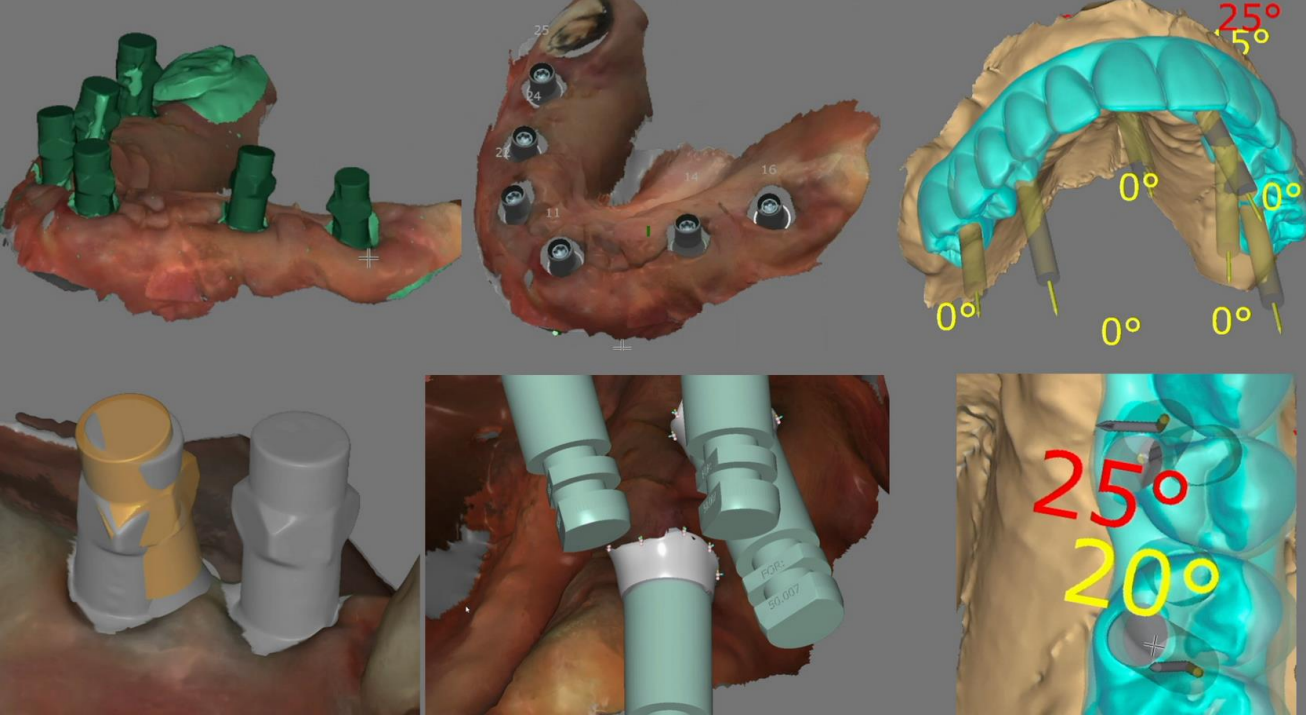
Everything was printed accordingly, in multiple options for different tasks: aesthetic evaluation setups, surgery guides etc.

When it comes to restoration on implants, the most important detail for us technicians is the precise alignment of the scan body. As the IO scan sometimes shows distortions caused by blood and saliva, it should always be carefully inspected.

Similar defects can also appear on the scans of the jaw or dies, just as they do on the scan body. Identifying and correcting these inaccuracies is a crucial step in the process.

Once resolved, the next tasks involve defining the marginal edge and fine-tuning the cement space parameters, ensuring they align with established guidelines for optimal fit and functionality.

In this case we used ANGLEBase® on Multi-Unit abutments for the upper jaw, and ANGLEBase® abutments direct on implants for lower jaw.



The emergence profile had not yet been formed so we created a standard shape that minimized pressure on the surrounding tissue while ensuring easier hygiene maintenance in the future.

Using DESS® ANGLEBase® was one remarkable advantage, as it allows angulation of the screw channel. This feature enabled us to position the channel openings outside the aesthetic zones, ensuring a more natural appearance.

Additionally, we adjusted the chimneys to avoid the tops of the supporting cusps and aligned them to facilitate a more efficient milling strategy.

For the finalization of the provisional we used milled PMMA.

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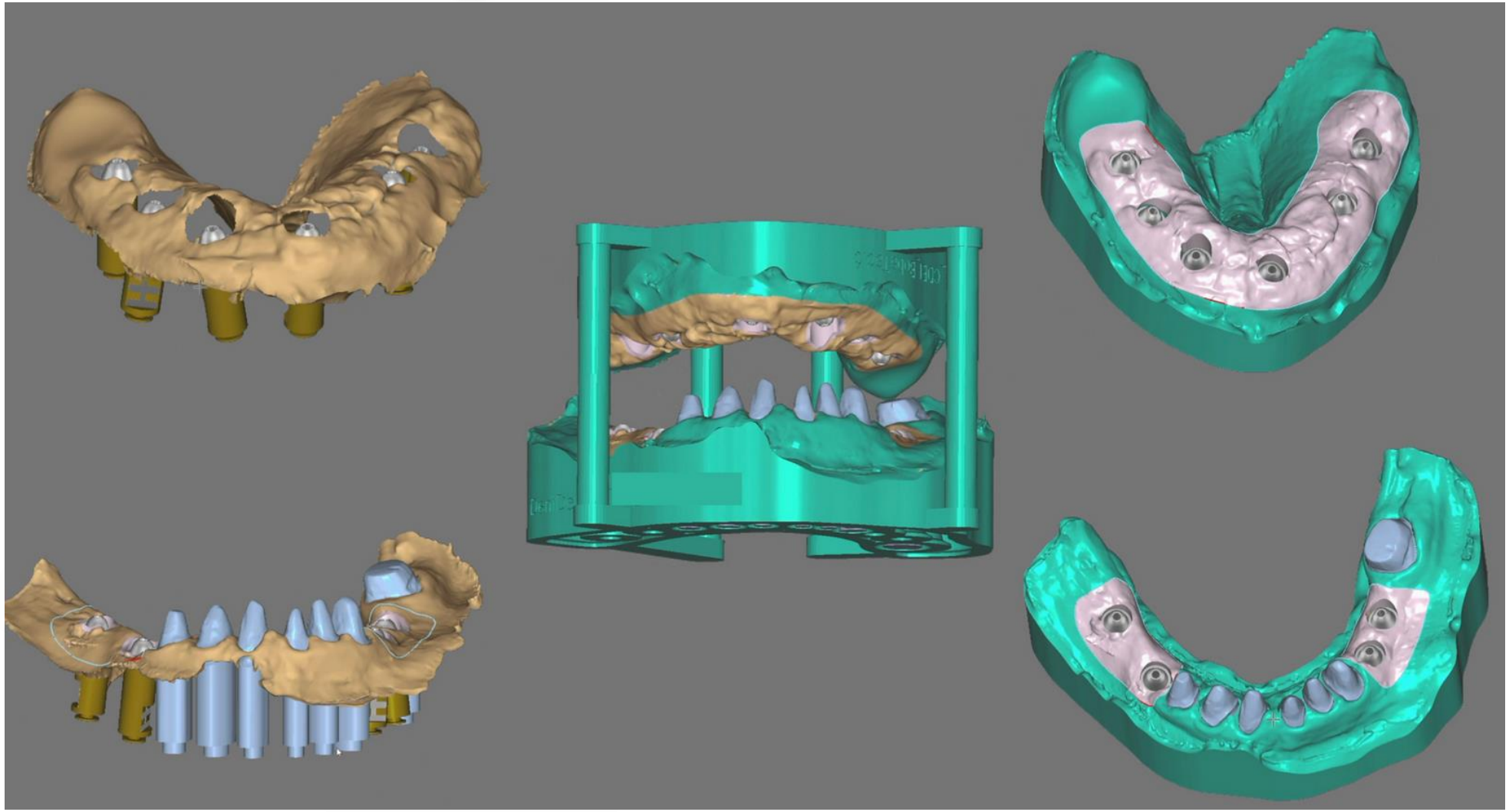
DESS® ANGLEBase® is the ultimate angled solution, with the most flexible angular channel on the market, allowing up to 25º angular freedom in every direction.

- ✓ Gold anodised surface for better aesthetic results.
- ✓ **SelectGrip® Surface**: offers 500% more bonding retention than an untreated surface
- ✓ Short shaft to give 360º angular freedom.
- ✓ Specially designed emergence hole.
- ✓ Manufactured in Titanium Grade V ELI.

After obtaining new intraoral scans and recording the maxilla's position relative to the condyle using the facebow, centric relation, and dynamic registers, it was necessary to create the models first. As this was a highly complex model, it required removable dies, implant analogues, and a movable section of gum around the implant. Along with the model, we also printed an additional set of teeth, which was used solely for placement in the articulator.



Models were slotted into the articulator using Splitex® tile system from Amann Girbach®, along with further individual adjustments. This position in the articulator was scanned using a desktop scanner, which gave us the possibility of using the virtual articulator.

Next step was the construction of a prototype - test drive. We were doing it all over again: scan body alignment, emergency profiles, marginal lines, screw channel angulations, etc.

We decided to change the theeth shape, which would give us a slightly more subtle female appearance. We went through the smile design procedure again, as it went much faster because the corrections were minimal.

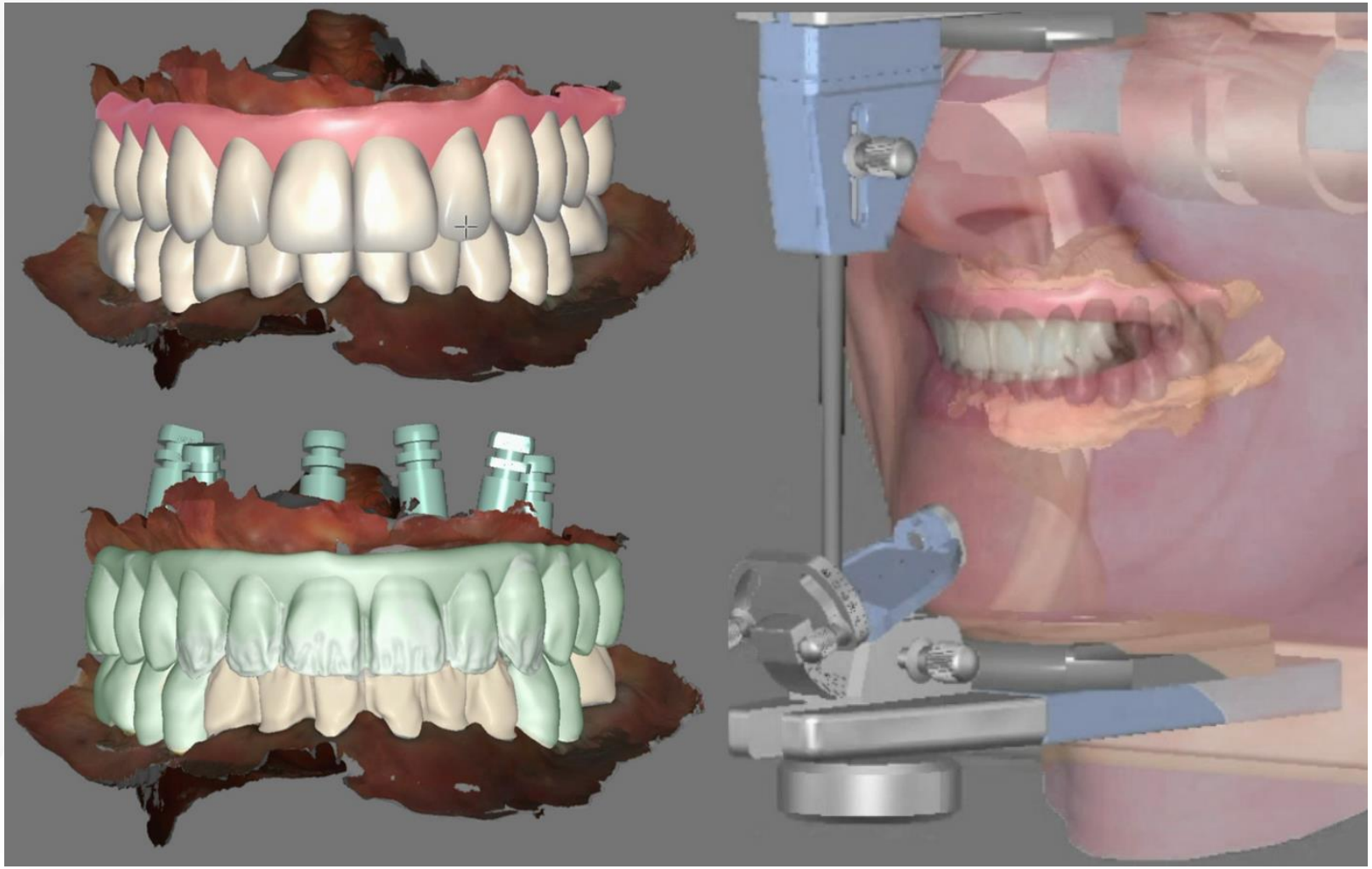
We would not change anything on the lower teeth, except for the bite correction. In the upper restoration, we modeled an artificial gum extension, in the manner of FP3 design parameters, which appeared to be necessary in this case.

We checked the look of the design with the 2D image, but we additionally got a face scan, which added a 3-dimensional aspect.

We adjusted the antagonist contacts during movement and finalised the design. The prototype was then printed and sent to the practice.

A prototype was needed to simultaneously evaluate the accuracy of the intraoral scan, as well as the aesthetic and functional parameters, before proceeding with the final framework.

By using the prototype prosthesis, the resulting definitive prosthesis could be fabricated without significant need for post-sintering modifications in its contour and occlusion.

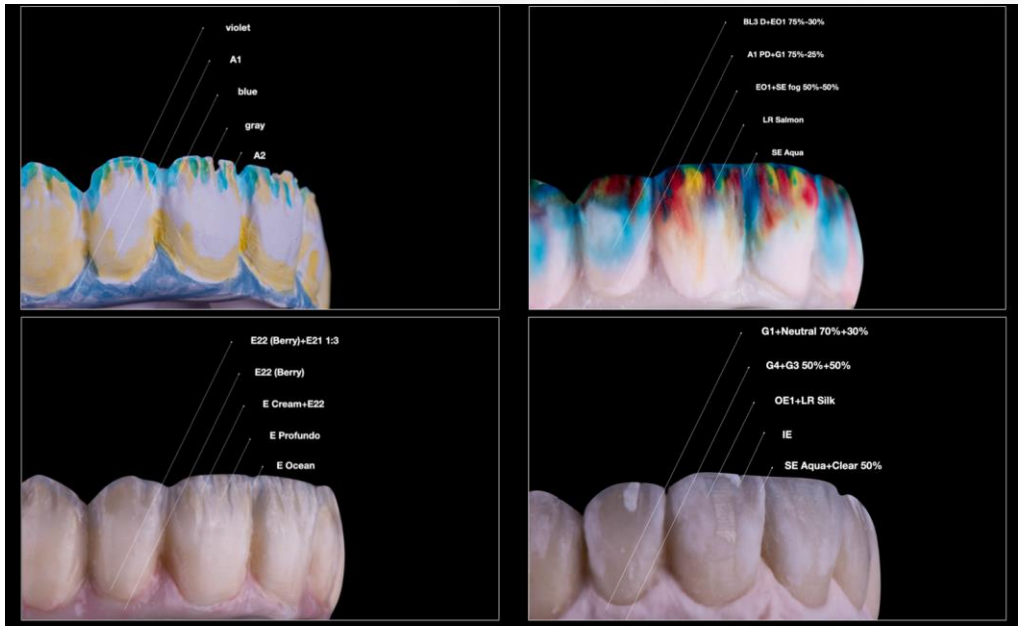


FINAL RESTORATION

The layering of ceramics was carried out using Ivoclar eMAXe® CERAM, following a specific technique designed to achieve optimal visual and aesthetic results.

The finishing of the process in the dental lab was followed by the bonding of ANGLEBase® with the frame using Ivoclar® Multilink hybrid abutment cement.

Delivery was carried out in accordance with the standards and guidelines of the dental profession.



The in-mouth pictures are courtesy of Dr Igor Ristić (Serbia)

BDT Deni Pavlovic

Serbia

- Graduated from Dental School of Belgrade in 1997
- Professionally trained in the fields of fixed, combined and implant prosthetics. Educational Center and Dental Laboratory STYLDENT in Arezzo Italy 2003 to 2006
- Founder of DENI DENT Laboratory for Dental Technology in Belgrade in 2005
- Opinion Leader of Ivoclar Vivadent for Serbia: ceramic and composite materials in 2016
- Chairman of the Board of the Association of Private Dental Technicians of Serbia from 2017 to 2019
- College of Applied Studies. Faculty of Dental Medicine at the University of Belgrade. Graduated in "Manufacturing of complex prostheses with milled telescopic crowns" 2017 to 2020.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